

## Denison Observer Receives the Thomas Jefferson Award

by Brad Fillbach, Hydro-Meteorological  
Technician/Cooperative Program Manager

Randy Grossman of Denison, Iowa recently received the Thomas Jefferson Award. It was a privilege to honor Mr. Grossman with the award for his outstanding achievements in the field of meteorological observations and community service. The Jefferson Award is the highest honor bestowed on an NWS volunteer cooperative weather observer. The award is named for Thomas Jefferson, the third President of the United States. President Jefferson took an almost unbroken series of weather observations from 1776 to 1816. No more than five Jefferson awards are given annually nationwide and the recipient must have previously received another distinguished recognition, the John Campanius Holm Award, at least five years prior.

Randy received letters of recognition from Senators Tom Harkin and Charles Grassley. Randy also received a Certificate of Recognition from the Governor's Office which was signed by Governor Terry Branstad and Lieutenant Governor Kim Reynolds.

To recognize this achievement, a ceremony was held at KDSN Radio Station in Denison where Randy works and makes his observations. His family (mother, wife and son) also joined KDSN radio station co-workers and NWS presenters Brad Fillbach and Brenda Brock, to celebrate his accomplishments.

Randy commented, "I've been employed at KDSN Radio in Denison since September of 1975. My duties at KDSN include

sports director, salesman, and on-air personality.

"In 1977, I became the Observer at KDSN and have been doing it ever since. I've enjoyed doing this over the years. Memories that stick out include the floods of 1993 and 1996; the tornadoes in Mapleton and Little Sioux and the many blizzards we've had. We're one of the few radio stations that has somebody on duty during all possible bad weather. It's an honor to receive this award."

In addition to weather and radio, Randy enjoys spending time with this wife, Deb, and son, Scott.



Brad Fillbach, NWS Des Moines Cooperative Program Manager (left) and Randy Grossman, Jefferson Award Winner (right)

## IN THIS ISSUE

Challenges of Winter Forecasting	Page 2
Boy Scout Weather Merit Badge Day	Page 2
Winter Outlook	Pages 3-4
Decision Support Services	Page 4
Climate Data	Pages 5-6
Word Search	Page 5
Media Workshop	Page 7
Employee Spotlight	Page 7
Co-Op Awards	Page 8
Fire Weather Season Wrap Up	Page 8
Flood Insurance	Pages 9, 11
Winter Weather Preparedness	Page 10
NWS Week of Service	Page 10
Training and Research	Page 11



## Editors

**Ken Podrazik**  
**Aubry Bhattarai**

**Cover photo**  
**courtesy of Kevin**  
**Skow**

## Challenges of Winter Weather Forecasting *by Rod Donavon, Senior Meteorologist*

Winter weather prediction tends to be one of the most challenging aspects of forecasting for Iowa. Meteorologists must consider several factors when forecasting winter weather including where the precipitation will fall, how much will fall and the precipitation type. Heavy banded events typically occur with heavy snow falling in one location, when a short distance away no precipitation was recorded. Many winter events across Iowa involve mixed precipitation, especially early and late in the season. Forecasting the correct precipitation type, and the timing of phase change to a different precipitation type, are critical to determining potential impacts. Often, mixed precipitation events include a mixture of rain, freezing rain, sleet and snow with all four phases occurring simultaneously across central Iowa.

The National Weather Service Des Moines meteorologists use the Top Down methodology to determine precipitation type. The first challenge in precipitation type forecasting is determining if ice has been introduced into the cloud layer. Water can exist at a super-cooled state with temperatures well below freezing. The majority of particles are assumed to be ice within an environment that is nearly saturated once temperatures reach -10°C or 14°F. If ice does exist, the atmosphere is evaluated for a warm layer which would allow for potential melting of the ice, and for a cold layer below the warm layer for refreezing. The final determining factor for precipitation phase of a melted drop is surface temperature. The initial ice particle will fall as snow if no warm layer sufficient enough for melting is encountered. The next step is determining how much liquid equivalent precipitation will occur. The liquid equivalent during mixed precipitation events must be parsed out for each precipitation type.

Snowfall amounts are forecast by first defining a snow to liquid ratio (SLR). The SLR is the ratio of snow depth to its melted equivalent liquid depth. Snowflakes fall in

a wide range of shapes and sizes, each with a different rate of efficiency for accumulation. Dendrites are the most popular snow crystal type and are the most efficient snowfall producer with an SLR of 25 to 1 or greater. A mix of dendrites, plates and needles snow crystal types yields SLR values of 12-18 to 1. The SLR will lower even further within warmer environments due to wet crystals or partially melted crystals that refreeze and limits the accumulation efficiency. Sleet does not accumulate efficiently with an SLR of 2-3 to 1. Fragmentation of snow crystals will lower the SLR by 25% or more when winds speeds in excess of 25 mph are occurring. Wind blowing snow causes tumbling and fracturing of snow crystals. The crystals fragment into smaller particles which settle more easily.

Ice accumulations with freezing rain are challenging to forecast as well. Ice accumulations occur in two forms, planar and radial. Planar ice accumulation is the amount of ice that freezes on a flat surface such as roadways and walkways. Radial ice accumulation occurs on objects such as tree limbs and power lines. Water expands when frozen to 1.09 its original volume. This rate rarely occurs with freezing rain. The rain often does not freeze instantaneously, leading to runoff. The most efficient freezing rain accumulations occur with increased wind speeds and temperatures dropping in to the upper twenties Fahrenheit. The increased winds enhance the heat transfer rate from the sub-freezing air to the liquid water which accelerates the freezing process.



*NWS Des Moines employees measure the liquid water content of snow*

## NWS Des Moines Hosts Boy Scout Weather Merit Badge Day

*by Frank Boksa, General Forecaster*

The National Weather Service in Johnston conducted their second annual Boy Scout weather merit badge day in October. Boy Scout Weather Merit Badge Day was created to benefit both groups. Because of staffing and training requirements, the NWS wanted to reduce the growing number of Boy Scout tours given at the NWS and we wanted the Boy Scouts to focus their thoughts on the requirements for the weather merit badge so they could receive recognition for their effort by earning the merit badge. The NWS conducted four, 90-minute sessions held on a Saturday in which the boys were taught about the hydrologic cycle as well as how thunderstorms, hail, tornadoes and lightning are formed. They were given a tour of the NWS and talks on careers in meteorology and the NWS were conducted. These sessions always fill up fast so this year the number of available slots was increased by three per

session. A total of 71 participants took part in Boy Scout Day 2012 and we hope everyone learned something and had fun doing so.



*Boy Scouts learning about NWS operations - October 20, 2012*



## Outlook for the Upcoming Winter Season into March

by Miles Schumacher, Senior Meteorologist

After a very hot and dry summer, the fall season has been fairly close to normal in temperature, though the overall drier than normal weather continued. Temperatures were consistently above normal for 13 months until October when it was just a few tenths of a degree cooler than normal. Drought conditions, the most widespread since 1956, were eased somewhat in October and November with cooler temperatures and rainfall closer to normal. Water temperature patterns in the equatorial Pacific trended toward El Niño conditions during the summer months, but this pattern has thus far been unable to become established. The warmest pool of water has shifted more toward the central equatorial Pacific, figure 1. This will become more important as explained later.

A significant El Niño signal was present by midsummer, but collapsed during the first part of the fall season. It is not uncommon for the lag between changes in the Pacific and the atmospheric response to be two to three months. The atmospheric response to El Niño may well have been a contributing factor to the cooler and somewhat wetter late summer into early fall. The warming of water in the equatorial Pacific decreased during the fall. At this time it appears unlikely that this winter will see a full blown El Niño develop.

The atmosphere typically follows a three to seven year cycle between El Niño and La Niña. Depending on the phase of the Pacific Decadal Oscillation (PDO), El Niño/La Niña is favored during warm/cold phase of the PDO. The Pacific is currently in the cold phase of PDO. La Niña conditions are favored by a two to one margin during the cold phase. El Niño events that occur during the cold phase tend to be weak. Model forecasts suggest we are unlikely to progress into an El Niño pattern during the upcoming Boreal winter. It is likely to be what is known as a neutral pattern this winter. Figure 2 shows the observed central Pacific sea surface temperature departure (solid black line) and a series of 24 forecasts, 16 of which are dynamical model based, eight of which are statistically based. The mean forecast from the dy-

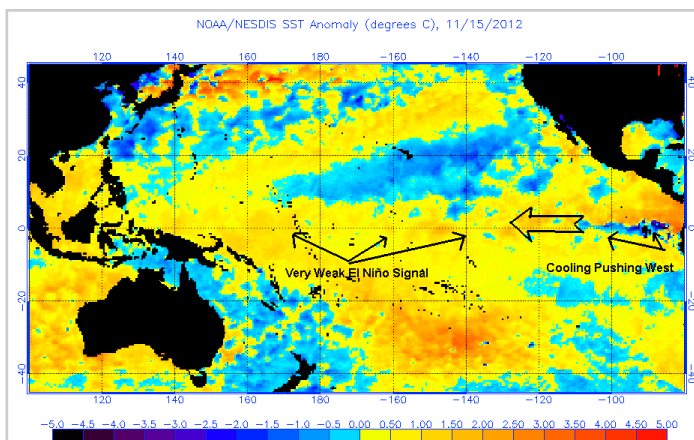


Figure 1: Sea surface temperature departure from normal, equatorial Pacific

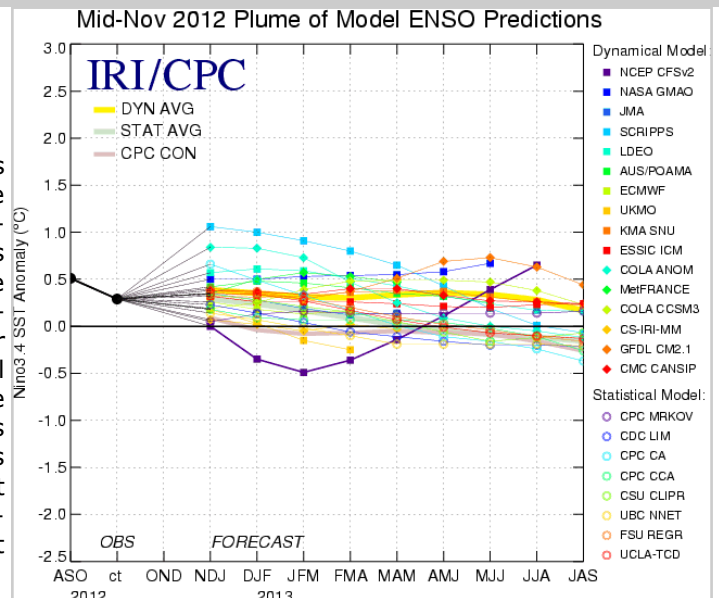


Figure 2: Sea surface temperature departure for the past two 3-month seasons, and the projection into Summer 2013. Departure in degrees Celsius is shown on the ordinate, with time on the abscissa.

namic models is shown in a wider yellow line, a wider pale blue line depicts the statistical model average. The mauve color wider line is the Climate Prediction Center consolidation. These forecasts are based on average conditions through the first part of November 2012. As can be seen in figure 2, the most likely outcome for this winter is a slightly warm neutral pattern. To be an El Niño pattern, the average temperature departure must be +0.5°C or more for three consecutive 90 day seasons.

Although in meteorology no two years are the same strictly speaking, one can look at weather patterns of the recent past to give some indications of near term weather trends in the future. This forecast is based in large part on the best fit from several of the years that were similar to the summer season through the middle fall months thus far. Considerations were also made for the state of the Pacific and expected El Niño neutral conditions and other factors that influence our weather pattern. Of note, mentioned above, the warm pool in the equatorial Pacific is shifting west of what would be typical of El Niño. In addition, some cooling continues to develop west of the South American Coast. These factors may well contribute to a westward shift of the typical western U.S. upper level ridge of high pressure, allowing for a higher probability for the delivery of Arctic air to the U.S. this winter.

Typically when an El Niño pattern begins to develop, it will be strongest during the early part of the winter season. It appears, due in part to a strong negative PDO, that the current attempt to develop an El Niño pattern has peaked, thus the winter will be neutral. This usually leads to a higher probability of cooler winters over the northern third of the United States. With the expected configuration of sea surface temperature departure shifted to the west, there is a better chance for colder air to slip south into the U.S. as we saw with a similar

(Continued on page 4)

## Outlook for Winter

(Continued from page 3)

shift during the 2009-10 winter season. Though the upcoming winter may not be as extreme, it is a good bet we will not see a warm winter like the winter of 2011-12. Temperatures for December are likely to continue the trend that has been in place through the early fall. Arctic air is likely to push southeast into the northeast quarter of the U.S. and spread southwest into Iowa. Precipitation is not expected to be sufficient to do much to recharge soil moisture in December, though it is not expected to be as dry relative to climatology as the past six months have been. See figure 3.

The atmosphere is expected to respond to the overall neutral Pacific Ocean temperatures. The suggestion is that cold air will sink into the northern part of the United States. The colder than normal air is expected to push at least as far south as northern Iowa during January and February. Farther south, temperatures are expected to be fairly close to normal. It should be noted again that these temperatures will be much colder than we saw last winter. The precipitation forecast for January and February is not a clear cut one. For one thing, there is normally little precipitation during the months of January and February in Iowa and one storm can have a significant effect on the departure from normal. It also appears likely that the weather pattern will be more active this coming winter than it was last winter. From statistical analysis of years similar to what is expected this winter, many of the weather systems do not bring large amounts of precipitation, thus a near normal amount is expected. See figure 4 for details.

It will be important to monitor the oceanic and atmospheric patterns over the next several months. Although precipitation this winter will be fairly close to normal, it

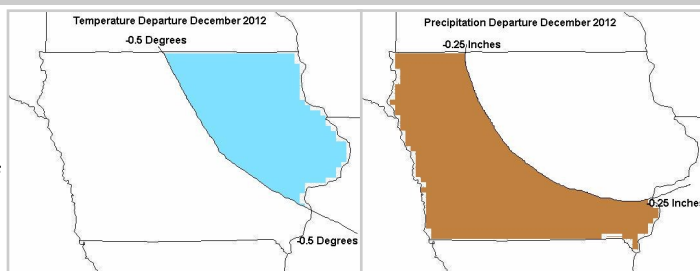


Figure 3: Mean Temperature (left) and Precipitation (right) departure for December

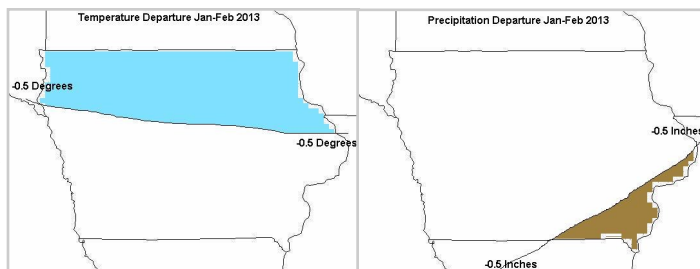


Figure 4: Mean Temperature (left) and precipitation (right) departure forecast for Jan/Feb of 2013

is unlikely that Iowa will receive enough rain to recharge the soil moisture to relieve the very dry conditions over much of the state. Early indications are that the spring season will begin warmer than normal with the colder than normal air shifting west. Rainfall will depend on how far to the west the cold air shifts, and thus the upper level trough. A significant shift could bring a drier than normal spring to Iowa.

These outlooks are based more heavily on statistics than many of the methods used by the [Climate Prediction Center](#). The complete set of official forecasts from the Climate Prediction Center can be found on our [website](#).

## NWS Des Moines Focus on Decision Support Services

by Mindy Beerends, General Forecaster

In mid September, 15 NWS Meteorologist from across the US gathered in Kansas City for the 2<sup>nd</sup> Annual Decision Support Services (DSS) Boot Camp held at the NWS Central Region Training Center (NWSTC). Among the attendees was NWS Des Moines Meteorologist Mindy Beerends. Throughout the week long camp, meteorologists learned many

ways the NWS can provide weather support to local/state officials and other NWS customers prior to, during, and after significant events and/or large disasters. Many of the topics included learning about the Incident Command System used by FEMA and State and County Emergency Management Officials, communication skills, including strategies for conducting weather or flood briefings and media interviews and learning about the different stages of a disaster such as mitigation, preparedness, response and recovery.

The skills were all put to the test as the camp culminated in a day-long exercise in which the attendees were put into a mock flooding situation. The students were to provide a weather forecast briefing, and overview of the flood situation and briefing on the river forecasts and crests. In addition to the briefings, mock television interviews were conducted

complete with feedback from a local KC television reporter. A mock State Governor was also present to ask questions and request specific information for flood planning and preparation purposes.

The experience gained at this camp by Ms. Beerends has been brought back and shared with the staff at NWS Des Moines, so the entire office can move forward and continue to foster working relationships with local and state officials. This will also help NWS Des Moines gain a better understanding of what the officials and customers of the NWS need to get their jobs done, and help our office look for the best ways to provide the needed information. Ms. Beerends has become the new DSS Program Leader at NWS Des Moines with Meteorologist Aubry Bhattarai working as the Assistant Program Leader.



DSS Boot Camp at the NWSTC



## Climatological Data for July through October 2012

Location	Month	Average Temp	Departure	Highest	Lowest	Rain / Snow	Departure
Des Moines	Jul	84.3°F	+8.0°F	106°F (25 <sup>th</sup> )	64°F (10 <sup>th</sup> )	1.24" / 0.0"	-3.23" / NA
	Aug	75.5°F	+1.2°F	99°F (1 <sup>st</sup> , 7 <sup>th</sup> )	51°F (18 <sup>th</sup> )	2.32" / 0.0"	-1.81" / NA
	Sep	66.4°F	+0.8°F	97°F (4 <sup>th</sup> )	36°F (23 <sup>rd</sup> )	0.98" / 0.0"	-2.07" / NA
	Oct	52.7°F	-0.4°F	81°F (21 <sup>st</sup> )	27°F (7 <sup>th</sup> )	3.34" / 0.0"	+0.70" / -0.4"
Mason City	Jul	77.2°F	+5.4°F	99°F (23 <sup>rd</sup> , 25 <sup>th</sup> )	54°F (11 <sup>th</sup> )	0.31" / M	-4.39" / M
	Aug	69.8°F	+0.5°F	99°F (30 <sup>th</sup> )	41°F (21 <sup>st</sup> )	0.58" / M	-3.46" / M
	Sep	61.1°F	+0.2°F	96°F (4 <sup>th</sup> )	28°F (23 <sup>rd</sup> )	1.15" / M	-2.12" / M
	Oct	46.2°F	-2.0°F	79°F (3 <sup>rd</sup> )	19°F (7 <sup>th</sup> )	2.32" / M	-0.13" / M
Waterloo	Jul	79.3°F	+5.7°F	104°F (25 <sup>th</sup> )	55°F (12 <sup>th</sup> )	0.76" / 0.0"	-4.15" / NA
	Aug	71.0°F	-0.2°F	97°F (7 <sup>th</sup> )	43°F (18 <sup>th</sup> )	1.47" / 0.0"	-2.80" / NA
	Sep	61.4°F	-1.6°F	95°F (4 <sup>th</sup> )	29°F (23 <sup>rd</sup> , 24 <sup>th</sup> )	1.88" / 0.0"	-0.75" / NA
	Oct	48.5°F	-1.8°F	78°F (3 <sup>rd</sup> )	21°F (28 <sup>th</sup> , 29 <sup>th</sup> )	3.86" / 0.0"	+1.38" / -0.3"
Ottumwa	Jul	81.1°F	+6.1°F	106°F (23 <sup>rd</sup> )	60°F (28 <sup>th</sup> )	0.90" / M	-3.57" / M
	Aug	72.2°F	-0.8°F	100°F (7 <sup>th</sup> )	47°F (18 <sup>th</sup> )	2.99" / M	-1.62" / M
	Sep	63.0°F	-1.4°F	94°F (4 <sup>th</sup> )	30°F (23 <sup>rd</sup> )	0.78" / M	-3.01" / M
	Oct	51.0°F	-1.4°F	81°F (24 <sup>th</sup> )	23°F (27 <sup>th</sup> )	4.49" / M	1.66" / M

## Winter Weather Word Search

S D K Z M U E R C P G U D U O N I R Q A B Z R D U  
 F R E E Z I N G R A I N I P T P T I L A L G W M F  
 S O L S T I C E M D Y J P E T K G C Y Q G I O R J  
 Z J I Z L E E R S N O W M O B I L E D B L W C P O  
 O F B W D B B L U S T E R Y Y M M S K O O H T F S  
 X S N I J F Q Q H V N X G H S G C T Y B O X Q T V  
 J U Q N Y I B L I Z Z A R D B M C O W S M F J N P  
 T N L T U O W I N D Y H D H O T B R P L Y O P B T  
 D D A E N U A H L V A I N R N X N M X E X E Y N R  
 T O F R I H K Q C C P N S L Q G E W H D H P Z Y B  
 B G U F Z D I Q B G B R H J H E Y I K D G W D K J  
 U H A K V O Y P H U C V O T W I Z N P C T E P H K  
 N S N O W M A N W I Z Q I R I I C T J P X Q W G N  
 J G G E W I U V T C L A J J K C U E Y H I V P Q J  
 G E W U A V N C U D A C R X O E E R E Z Q I I W K  
 G R V B V S R D O V W C V K B P X S O M W C B E C  
 O M D C N A Z S C D U U D W S I E T K W U C O U G  
 X E F S W N T H J H H M Y W L L V O H A G Y K L P  
 R E V X J C Z P I H I U R S E L X R O X T D C A D  
 P O L A R C T O Z N A L E N E A L M B E X I Q H Z  
 X Y C V N J K K W P K A L O T R I E V T R P N S L  
 E K D T S S K B S C R T M W R W B R A B Y L Q G I  
 X G W W S B D S Z V V I G A S K I I N G S U S K K  
 P A X L E Z V D Z F I O T K N T G C D R M G D Y U  
 Z N D I V Q M I C C P N I E N R T U Z Z J E K G B

ACCUMULATION  
 ARCTIC  
 BLIZZARD  
 BLUSTERY  
 BOBSLED  
 COLD  
 FREEZINGRAIN  
 GLOOMY  
 ICE  
 ICEPILLAR  
 ICESKATING  
 ICESTORM  
 LUGE  
 POLAR  
 SKIING  
 SLEET  
 SNOW  
 SNOWMAN  
 SNOWMOBILE  
 SOLSTICE  
 SUNDG  
 WINDCHILL  
 WINDY  
 WINTER  
 WINTERSTORM

Answer key  
on page 10

# Iowa Statewide Averages and Rankings for Temperature and Precipitation

by Craig Cogil, Senior Meteorologist

Month	Temperature	Departure from Normal	Rainfall	Departure from Normal	Temperature Ranking	Precipitation Ranking
July 2012	79.7°F	+6.1°F	1.16"	-3.34"	3 <sup>rd</sup> Warmest	5 <sup>th</sup> Driest
August 2012	71.2°F	-0.3°F	2.95"	-1.25"	52 <sup>nd</sup> Coolest	48 <sup>th</sup> Driest
September 2012	62.1°F	-1.1°F	1.63"	-1.75"	44 <sup>th</sup> Coolest	18 <sup>th</sup> Driest
October 2012	48.7°F	-2.1°F	3.12"	+0.51"	26 <sup>th</sup> Coolest	41 <sup>st</sup> Wettest
<b>Summer 2012 (Jun to Aug)</b>	<b>74.2°F</b>	<b>+2.6°F</b>	<b>7.10"</b>	<b>-6.61"</b>	<b>14<sup>th</sup> Warmest</b>	<b>5<sup>th</sup> Driest</b>

Rankings are based upon 140 years of records. All values are preliminary.

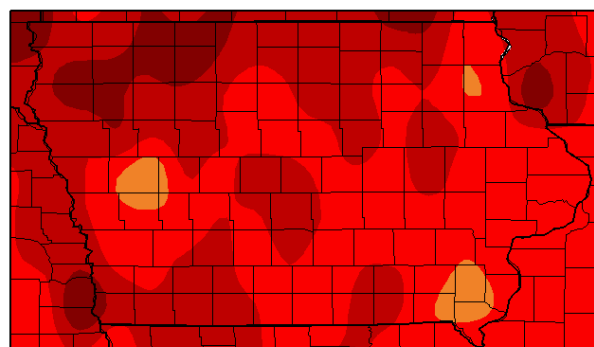
## Late Summer and Fall Weather Review

by Craig Cogil, Senior Meteorologist

### Temperatures:

Temperatures were hot during the month of July with the 3<sup>rd</sup> hottest July on record across the state. Several days saw temperatures exceed 100 degrees in portions of the state with Des Moines recording ten days of triple digit heat during the month. Temperatures moderated into August and the fall with statewide readings falling below normal during this time. However, above normal temperatures returned during the month of November with the jet stream keeping cold polar air bottled up in Canada. So far, year to date, many locations in Iowa are near their all-time record warmest year with the exceptional warmth experienced in the first half of the year. The normal image (right) is the temperature departure for the year to date. Currently, almost the entire state has a departure in excess of three degrees for the year with some locations over five degrees.

Departure from Normal Temperature (F)  
1/1/2012 – 11/24/2012



Generated 11/25/2012 at HPRCC using provisional data.

Regional Climate Centers

### U.S. Drought Monitor

Iowa

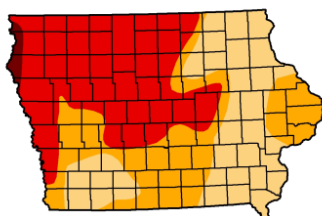
November 20, 2012

Valid 7 a.m. EST

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	100.00	68.65	41.70	1.23
Last Week (11/13/2012 map)	0.00	100.00	100.00	68.65	41.70	1.23
3 Months Ago (08/21/2012 map)	0.00	100.00	100.00	100.00	67.54	0.00
Start of Calendar Year (12/27/2011 map)	80.99	39.01	30.33	24.15	0.00	0.00
Start of Water Year (09/25/2012 map)	0.00	100.00	100.00	100.00	65.77	2.52
One Year Ago (11/15/2011 map)	22.20	77.80	41.83	23.87	0.00	0.00

#### Intensity:

D0 Abnormally Dry  
D1 Drought - Moderate  
D2 Drought - Severe  
D3 Drought - Extreme  
D4 Drought - Exceptional



The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

<http://droughtmonitor.unl.edu>



Released Thursday, November 22, 2012  
National Drought Mitigation Center

Image valid for the week of November 20. For the most recent Drought Monitor information for Iowa, click the image above.

### Precipitation:

Rainfall remained well below normal from July into much of the fall. There was some relief in October as a few different storms brought beneficial rainfall to much of the state, especially in the south and east. However, rainfall deficits for the year remain below to much below normal across the entire state. The combination of heat and lack of rainfall led to widespread drought conditions over much of Iowa during the summer with the drought persisting to the present. This combination also led to a large reduction in crop yields as the plants struggled to produce in the sweltering conditions. Rivers and streams across the state dropped to very low levels as well with the water table lowering through the summer. This produced some water restrictions in some communities across the state during the height of the summer. However, most of the restrictions were rescinded as demand for water fell with the arrival of cooler weather in the fall. The following image continues to show the widespread drought conditions over Iowa with northwest into central Iowa currently seeing the worst conditions.

We want your feedback! We want to hear about your favorite stories and features, or if there is something you would like to see in an upcoming issue, let us know! Contact the editors at:  
[Kenneth.Podrazik@noaa.gov](mailto:Kenneth.Podrazik@noaa.gov) or [Aubry.Bhattarai@noaa.gov](mailto:Aubry.Bhattarai@noaa.gov)



## NWS Des Moines Hosts Broadcast Media Winter Weather Workshop

by Jeff Johnson, Warning Coordination Meteorologist



Broadcast meteorologists that service Iowa starting from left to right: Brad Edwards (WOI-TV), Greg Ambrecht (WOWT), Jill Gilardi (WOWT), Eileen Loan (KWWL), Megan Salois (WHOTV), Ted Schmidt (KTTC), Jeriann Ritter (WHOTV), Justin Gehrts (KCRG), Chris Maiers (WOT-TV), Jason Parkin (KCWI23), Wes Callison (KCCI)

On October 24, 2012, the National Weather Service (NWS) in Des Moines, IA hosted a Broadcast Media Winter Weather Workshop. The workshop strengthened a key NWS partnership with the media, to help develop a Weather-Ready Nation. The workshop focused on winter weather forecasting techniques, how to improve NWS and broadcast media collaboration, and significant winter weather messaging and dissemination.

The NWS in Des Moines, IA hosts broadcast meteorologists workshops periodically in the spring and fall. Spring workshops focus on severe weather while the fall workshops focus on winter weather. The workshops have been well attended by meteorologists from four states.

Broadcast meteorologists came from all across Iowa, southeast Minnesota and Omaha to the workshop. The immediate feedback from our media partners was very positive including compliments on the forecasting techniques presentations. A round table discussion focused on how best to deliver decision support services to NWS partners and stakeholders and hazardous weather information to the public.

We enjoyed the interaction with the broadcast meteorologist and we appreciate their dedication to keeping people informed about hazardous Upper Midwest weather.

## Employee Spotlight Rob DeRoy, Data Acquisition Program Manager

My interest in weather began very young while growing up in the high plains desert of New Mexico. The spectacular late summer season, with high-based thunderstorms and lightning common to that area were, and still are, a particularly fascinating weather phenomenon to me.

Following enlistment in the U.S. Navy I attended Meteorological and Oceanographic schools. I served as an Aerographer's Mate aboard the USS Okinawa, an amphibious assault vessel which specialized in supporting the U.S. Marine Corp missions and training. During four years aboard ship, I experienced extended travels across many parts

of the world including the Persian Gulf and much of the Western Pacific region. My military service provided an excellent opportunity to train and study meteorology in collaboration with other experienced forecasters. Upper air balloon observations, satellite tracking, and weather forecasting supported flight operations while underway for months at a time.

One of many notable shipboard experiences was a shipboard passage through the eye of Super Typhoon Rita, a Category 5 storm, in October of 1979. The Typhoon left indelible memories of the power of nature and an appreciation for the vastness and might of the Pacific Ocean.

My career with the National Weather Service began in 1989 at Dubuque, Iowa. The NWS core mission of protection of life and property appealed to me as an excellent public service environment in which to work. Starting my NWS career as a Meteorological Technician eventually led to advancement to the position of Official in Charge at the Dubuque Weather Service Office. Following several years at Dubuque, a newly developed position as a Data Acquisition Program Manager gave me the opportunity to work in Great Falls, Montana for a time after which I returned back to Iowa at Des Moines in 1996.

My hobbies include whitetail and pheasant hunting, and motorcycling with my wife and two sons.

The diversity of Iowa's weather is very unique and the challenges never grow old. It has been a privilege to work for such an exceptional public service agency as the National Weather Service. The tremendous skills and dedication of the men and women who make up the NWS makes this a truly great place to serve.



Following the Navy, an opportunity with the Department of Defense's (DOD) Atmospheric Sciences Laboratory allowed me to work in the field of micrometeorology in support of weapons systems testing at White Sands Missile Range in New Mexico and Aberdeen/Edgewood Proving Grounds in Maryland. The support of the United States Air Forces Geophysics/High Altitude Balloon Research Facility was one highlight of my eight years with the DOD in New Mexico.

## 2012 Cooperative Observer Length of Service Awards

by Brad Fillbach, Hydro-Meteorological Technician/Cooperative Program Manager



Grace Barter of Kesley, IA receives her 20 year length of service award.



Frank Spaur of Bussey, Iowa receives his 15 year length of service award.

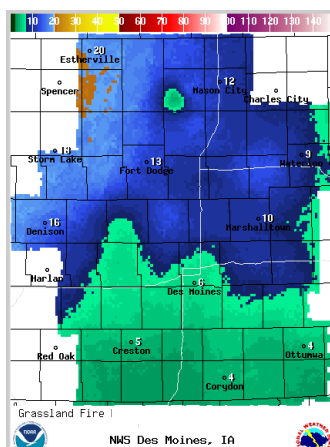


Robert DeVore of Promise City receives his 15 year length of service award.



Dave Harner of Swea City, Iowa receives his 10 year length of service award.

## Fire Weather Season Wrap Up by Frank Boksa, General Forecaster



The 2012 fire weather season came to an uneventful end on November 15. This year proved to be quite challenging both in terms of record heat and drought. In preparation for the fall harvest, the National Weather Service published safety guidelines for harvesting in extremely dry and warm conditions. The lack of rainfall hurt crops this year and as a result harvesting started about 3 weeks ahead of schedule. Thankfully there were not many incidents during harvest and conditions have settled since then with most locations getting some rainfall and temperatures falling back down to near normal.

I wish to thank our volunteers at the County Conservation Board and our volunteer in Mahaska County for providing curing data. This data is crucial to our Fire Weather Planning Forecasts and in the decision process for Red Flag Warnings and Fire Weather Watches. These folks provide this information to us on top of their regular duties and we appreciate their efforts very much.

This marks the end of the first season that Iowa has had a State Fire Weather Plan. Over the next couple of months I will be reviewing that program, and how that worked with our partners and will be making improvements for the 2013 season.





## Why Does My Insurance Policy Not Cover Flooding?

By Jeff Zogg, Senior Hydrologist

Many of us watched with sadness as Hurricane Sandy moved up the eastern seaboard of the U.S. earlier this season. Although the storm came ashore in New Jersey, several states were affected by flooding, destructive wind, severe weather and heavy snow. Many people were killed, homes and businesses were lost, and lives were changed forever. Current estimates put the insured losses in the tens of billions of dollars. That figure does not include uninsured losses however.

Among the most significant reasons for the damage was flooding. The storm surge itself led to devastating flooding in many areas. In other areas, flooding from the heavy rainfall caused significant damage. Sadly, many people who experienced flood-related losses did not have insurance coverage for these losses. Some people may have incorrectly thought that their homeowners or business insurance would cover the flood loss. Perhaps others were aware of this coverage gap but did not think flooding would affect them. Regardless of the reason, the end result is the same: homeowners and business owners could be exposed to staggering flood-related losses if their property is not properly insured against flood damage.

It may be difficult to think about flooding during the current drought here in Iowa. Although conditions are dry now, it is likely a matter of time until flooding threatens our state again.

One way to help protect against flood-related damage is to purchase flood insurance. Flood insurance is offered by the Federal Government through the National Flood Insurance Program (NFIP). The NFIP is administered by the Federal Emergency Management Agency (FEMA). Property or business owners can purchase the flood insurance through some—not all—local insurance agents. In some cases, a waiting period applies before flood insurance takes effect.

Below is a list of frequently asked questions along with the answers. For more information—including where to purchase flood insurance—refer to the FEMA FloodSmart Web site at <http://www.floodsmart.gov/>. Also feel free to contact me at [jeff.zogg@noaa.gov](mailto:jeff.zogg@noaa.gov).

Note that before you purchase a flood insurance policy, it is important to review what is covered and what is not covered by the flood insurance. You should also compare the coverage and exclusions of both flood insurance and your existing homeowners or business insurance. Make sure you understand what would be covered and what would not be covered if a flood impacts your property.

**Why should I have flood insurance? Doesn't my homeowners or commercial property insurance already cover flood damage?**

Most homeowners and commercial property insurance policies do not cover flood damage. Floods are the #1 natural disaster in the United States. They are more common than tornadoes, earthquakes and fires. They have caused nearly \$24 billion in U.S. flood losses in the last 10 years. There is a 26% chance of experiencing a flood during the life of a 30-year mortgage in high-risk areas. If your home or business is in a high-risk area, it is more than twice as likely to experience a flood than a fire.

**What about flood-related disaster assistance? Why not just use that assistance instead of having flood insurance?**

When flooding causes extensive and widespread damage, the Governor or President may make a disaster proclamation. These proclamations can make disaster-related money assistance available to affected property owners. It is important to know that this disaster assistance is typically not a grant or forgivable loan however. Instead, it is typically a loan that you must repay with interest. For a \$50,000 loan at 4% interest, your monthly payment would be around \$240 a month (i.e., \$2,880 a year) for 30 years. Com-



**FloodSmart.gov**  
The official site of the NFIP

pare that to the premium for a \$100,000 flood insurance policy, which is around \$400 a year (\$33 a month).

**Why not just wait to purchase flood insurance until the flood is a few days away?**

It takes 30 days after purchase of flood insurance for the policy to take effect. Thus, is important to buy insurance before the floodwaters start to rise. Aside from snow melt floods, most floods occur with much less than 30 days advance notice.

An exception to the 30-day waiting period is when flood insurance is required as part of a mortgage. For example, flood insurance may be mandatory if your property is in a high-risk area or a Special Flood Hazard Area (SFHA) and you have a Federally-backed mortgage.

**Is flood insurance available only for my home?**

No. You can purchase flood insurance for both residential and commercial coverage.

**Is flood insurance available only for locations in the flood plain?**

No. You can purchase flood insurance for nearly any location, whether or not it is in a flood plain. Everyone lives in a flood zone—but some areas are at a higher risk of flooding than others. Nearly 25% of all flood insurance claims come from moderate- to low-risk areas (i.e., outside the flood plain).

**I was in a low-risk area for flooding when I moved in. Why should I be concerned about flooding today?**

The risk of flooding at the same location may increase or decrease over time. New land development can increase flood risk. Increases in precipitation amounts may also increase the flood risk. So just because you are in a low-risk area

(Continued on page 11)

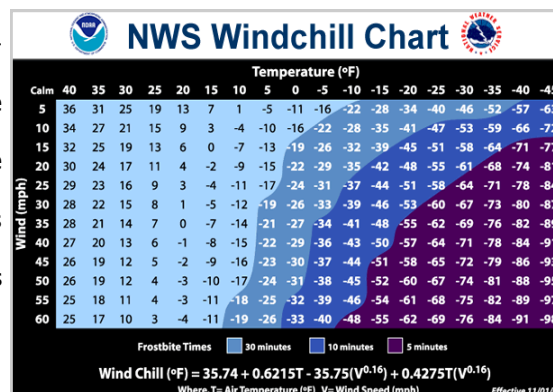
## Winter Weather Preparedness by Aubry Bhattarai, General Forecaster

Each year, exposure to cold, vehicle accidents caused by wintry roads, and fires caused by the improper use of heaters injure and kill hundreds of people in America. Add these to other winter weather hazards and you have a significant threat to human health and safety.

Winter storms can range from a moderate snow over a few hours to a blizzard with blinding, wind-driven snow that lasts for several days. Some winter storms are large enough to affect several states, while others affect only a single community.

*What to listen for:*

- \* **Winter Weather Advisory:** Accumulations of snow, freezing rain and/or sleet which, if caution is not exercised, could lead to life-threatening situations.
- \* **Winter Storm Watch:** Winter storm conditions are possible in the next 12 to 48 hours.
- \* **Winter Storm Warning:** Issued when hazardous winter weather in the form of heavy snow, heavy freezing rain and/or heavy sleet is occurring or expected to occur within the next 36 hours.
- \* **Blizzard Watch:** Blizzard conditions are possible in the next 12 to 48 hours.
- \* **Blizzard Warning:** Combination of sustained wind or frequent gusts of 35mph or greater and visibility less than ¼ mile in snow and/or blowing snow expected to last at least 3 hours. Expected to occur within the next 36 hours.
- \* **Wind Chill Advisory:** Wind chill values between -20°F and -29°F are expected to occur within the next 36 hours.
- \* **Wind Chill Watch:** Wind chill values of -30°F or lower are possible within the next 12 to 48 hours.
- \* **Wind Chill Warning:** Wind chill values of -30°F or lower are expected to occur within the next 36 hours.
- \* **Freezing Rain Advisory:** Accrual of less than ¼ inch of ice is expected due to freezing rain within the next 36 hours.
- \* **Ice Storm Warning:** Accrual of ¼ to one inch or more of ice is expected due to freezing rain within the next 36 hours.



### Know before you go:

- ⇒ Have your vehicle winterized before the winter storm season.
- ⇒ Keep the gas tank full so you are ready in case of an emergency, and to prevent the gas line from freezing.
- ⇒ Take a fully charged cell phone or two-way radio with you.
- ⇒ Plan to travel during the daylight and, if possible, take at least one other person with you.
- ⇒ Let someone know your route and when you expect to arrive.
- ⇒ Avoid travel after a winter storm as roads may still be blocked or snow may still be blowing, reducing visibilities.
- ⇒ Be sure to check the weather and road conditions before leaving!

## NWS Des Moines Participates in the NWS Week of Service

*by Mindy Beerends, General Forecaster*

On October 4, the National Weather Service Des Moines staff members participated in the Second Annual NWS National Week of Service by volunteering to provide a meal for the local Ronald McDonald House. The staff purchased and prepared a taco bar dinner for the families staying at the Ronald McDonald House near Blank Children's Hospital in downtown Des Moines. The home serves as a home-away-from-home for families of seriously ill children that are hospitalized in the Des Moines area. Many staff members also donated general household, personal care and food items for the house.

The Second Annual NWS National Week of Service was held during the week of September 30 to October 6, 2012 with several NWS Weather Forecast Offices, Central Weather Service Units, River Forecast Centers, Regional Headquarters, National Headquarters, and National Centers all participating in the community service

event. Throughout the week, NWS staff members from across the country gave back to their respective communities by volunteering their time and efforts to reach out to those in need with all of the activities occurring outside of normal work hours.



NWS Des Moines employees serve at the Ronald McDonald House

For More Information on Wither Weather in Iowa, Visit Our [Preparedness Webpage!](#)





## Training and Research Initiatives

*By Karl Jungbluth, Science and Operations Officer*

Meteorologists at NWS Des Moines are getting in shape to forecast upcoming winter weather. Their internal training is especially important after the previous mild, uneventful winter, and a hot, dry summer with a lack of severe weather.

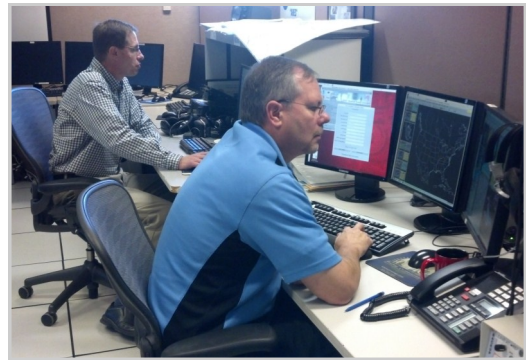
To ward off meteorological "flabbiness," forecasters are just finishing a rigorous program of scientific seminars, meteorological training modules and a couple of sessions at the National Weather Service's Weather Event Simulator. At the Simulator, high impact weather events from past winters are replayed, just like they were live. Working in tandem with office experts, forecasters practice techniques of meteorological diagnosis and forecasting. Then, the exact tools they would employ in real winter storms are used to build forecasts of precipitation type, snowfall amounts and freezing rain accumulation for the National Digital Forecast Database and the public. Forecasters can even draw up a practice Winter Storm Warning if they wish, ensuring that everyone is proficient and ready when the big weather inevitably hits.

We are proud that our people not only complete all of this training, but that many of them are heavily involved in the development and instruction of that training. As many of our readers know, the best way to become an expert on a topic is to teach it!

Even though the winter season is just beginning, as training and research goes, we are already looking ahead to the 2013 severe weather season. Challenged by the complexity of the April 14, 2012 Creston tornado event, meteorologists at NWS Des Moines are working

on a research project to better understand the thunderstorm interactions which led to the tornado. Our research team has searched far and wide for similar events but has found only a few. It turns out that the configuration of the storm was quite rare, with the tornado occurring at the back edge of a line of heavy rain. The plan is to share research findings with other NWS offices and improve the accuracy of future tornado warnings.

In summary, the learning never stops for the NWS Des Moines staff. Although rarely glamorous or in the public eye, these activities improve the quality of warnings and forecasts every day, a key component toward building a Weather-Ready Nation. Rest assured, NWS Des Moines is always ready to deal with whatever Mother Nature dishes out!



*Meteorologists training on the Weather Event Simulator*

## Flood Insurance

*(Continued from page 9)*

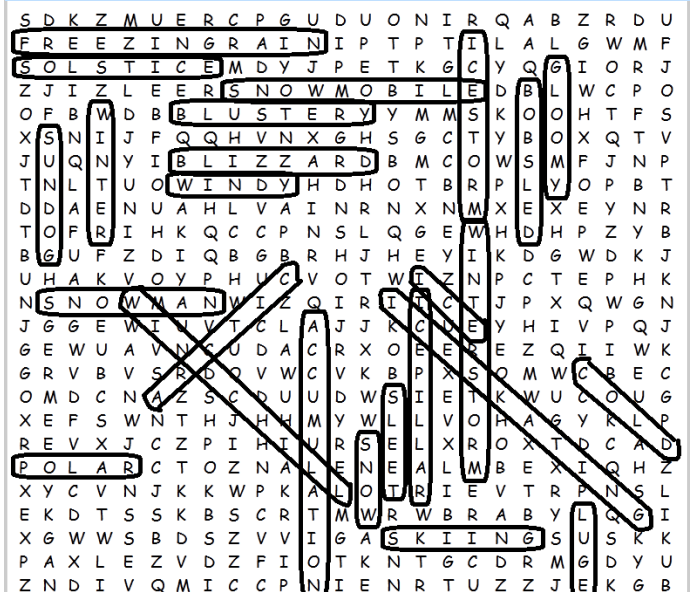
now—or you were in a low-risk area when you moved in—does not necessarily mean that your risk of flooding will stay that way. You may be in a moderate- to high-risk area later (or even today).

### How much does flood insurance cost?

Flood insurance premiums take into account the risk of flooding as well as the amount of coverage you desire. If you live in a moderate- to low-risk area and are eligible for the Preferred Risk Policy, your flood insurance premium may be as low as \$119 a year, including coverage for your property's contents. The average flood insurance policy costs less than \$570 per year.

To find your flood risk and estimate your flood insurance premium, use the One-Step Flood Risk Profile on the FloodSmart Web site.

## Word Search Solution





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